Sea Technology Index

Volume 24, 1983

This is a three-part, instant-reference index of technical material and news appearing in *Sea Technology* Magazine, Volume 24, 1983. Part One—monthly contents; Part Two—authors; Part Three—subject index. Numbers following title, author and subject are month and page number.

Part One
Monthly Contents

January 1983

Hope Generated, Hope Dimmed, Hope Eternal—*Editorial* 7
Sea Technology Review and Forecast—Introduction 10
A Look at the Offshore Mobile Rig Market for 1983 11
Antisubmarine Warfare Funding Remains Substantial 13
Marine Geophysical Survey 15
Undersea Vehicles 16
Deep Diving in 1982 and the Future 17
Ocean Sciences Review and Forecast 21
Naming Undersea Features: A Status Report 21
Hydrographic Surveying 22
U.S. Avoids 'Political Pricing' in Shipbuilding 23
NOIA's Telecommunications Committee On Course for 1983 25
National Sea Grant Program Comes of Age 26
1982 83 In The Undersea Service Industry 29
The Year Ahead in Higher-Level Marine Education 31
The Demand for Research Time on Ships Operated by UNOLS Institutions 34
A Society in Tune With the Times 35
Aquaculture in the United States 36
Oceanographic Research in the U.S. Navy 37
Firing Line Report: '83 Sales Look Promising 38
Management In Antarctic Treaty Activities 40
Deep Ocean Mining Economics 41
NOAA Strives to Benefit Ocean User Community 43
Oceanic Policy for 1983 and Beyond 44
Echo Sounders Move into the Microprocessor Age 46
Editor's Forum on National Ocean Policy 51
Two Long Range U.S. Winter Weather Forecasts Mainly Agree 55
Soapbox: Top Level Coordination Needed in Marine Affairs. 85

February 1983

A Dose of Ingenuity—*Editorial* 7
A New Acoustic Doppler Current Profiler 10
Ferromanganese Deposits Detected By Multifrequency Acoustic System 15
ROV '83 Will Draw International Vehicle Specialists to San Diego 21
Ship Maneuverability, Ice "Lubrication" Combined 23
Accurate Hydrocarbon Estimates Attained with Radioactive Isotope 27
Epaulard, A Deep Ocean Exploration Vessel 30
High-Level Radioactive Waste Disposal on the Ocean Floor: An Introduction 36
International Conference on Underwater Operations Held in Paris 40
Soapbox: Top Level Coordination Needed in Marine Affairs 69

March 1983

Here We Go Again—*Editorial* 7
The Federal Radionavigation Plan from a Department of Defense Perspective 10
Del Norte Positioning System Widely Used in Alaska Offshore 16
1983 U.S. Navy League Convention 19
Onboard Trainers: A Novel Approach to Meeting the Navy's Sonar Training Needs 20
The Role of Navigation for the Offshore Petroleum Industry 24
International Diving Symposium Attracts 2000 to New Orleans 31
A New High Precision Range Azimuth Position Fixing System 33
Diver Navigation by Sound 37
Fiscal Year 1984 Budget a Mixed Bag 47
Computer System Monitors Vessel Systems Efficiency 60
Soapbox: Where in the World Am I? 85

April 1983

Seaset's Endowment to Spacecraft Oceanography—*Editorial* 7
1983 Situation Report on the Offshore Mobile Rig Fleet 11
Geophysical Exploration Vessel Updated 19
Mobile Offshore Drilling Units for Frontier Areas 23
Digital Heading Sensors for Marine Applications 31
A New Ocean Meteorological Data Buoy 35
1983 Offshore Technology Conference 40
Benthos RPV-430 Vehicle Working in Offshore Support 43
Scientists Probe Secrets of Australian Sea Lane 45
Meeting the GPS Challenge 48
Digital Pressure Testing Utilized on *USS Coral Sea* 57
"Woods Hole Reflections"—Book Review 61
Soapbox: Chesapeake Bay's Physical Model—Uncertain Future 97

May 1983

More Spadework Needed —*Editorial* 7
Marine Satellite Communications Update 11
Maritime Communications—Key to Offshore Efficiency 16
Planning for New Generation of Maritime Satellites 19
IMO's New Distress System Taking Shape 21
Sea Trials Completed on INMARSAT Emergency Beacons 25
ROV '83: An Unqualified Success 29
INMARSAT Shows Great Growth Potential, Profit by 1985 31
Offshore Scotland: New Tax Structure Expected to Spur North Sea Development 34
Krupp Doppler Speed Log Aids U.S. Cable-Laying Ship 38
NOIA Members Optimistic Despite Soft Activity 42
Editor's Forum on National Ocean Policy: Reaction 43
Soapbox: Will Robots Replace Man in the Sea? 69

June 1983

Ocean Scientists Meet a Challenge—*Editorial* 7
An Oceanographic Laboratory on a Seamount 10
NOAA R/V Rehabilitation Continues on Schedule 17
Coping With Ice in Offshore Oil Exploration 20
Scripps Marine Physical Laboratory—30 Years of Excellence in Ocean Research 24
Diving Research Forges Ahead at University of Pennsylvania 30
Soft Fendering for Pier and Dock Upgrading 39
Hull Coatings for Corrosion Protection 42
Soapbox: The Federal Oceanographic Fleet—An Endangered Species? 69

July 1983

Once More, With Fervor, Independence for NOAA!—*Editorial* 7
NOAA OTEC Research Aims At Future Payoffs 10
New Horizons for Deep Ocean Minerals 19
Engineering R&D Dedicated to U.S. Navy Requirements 27
Breadalbane Saga Brought to Successful Conclusion 37
Major Revision Proposed in Aquaculture Act Reauthorization 39
Opinion Poll—An Independent NOAA? 40
TV-Like Pictures at 100 Meters 41
Oceans '83: Effective Use of the Sea—An Update 47
Vessel Charter for Marine Research & Survey 49
Acoustic Remote Sensing System Used in Dredge Spoils Study 53
Siberian Lake Yields Freshwater Animals from One-Mile Depths 54
Soapbox: Oceans at the Service of Humankind 93

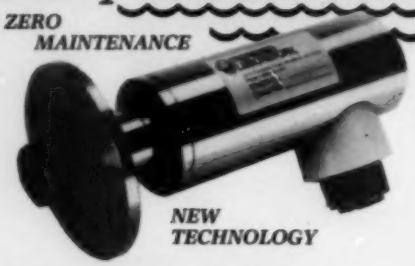
August 1983

The Politics of Weather—*Editorial* 7
Geophysical Applications of Satellite Data Communications 10
INMARSAT's 56-Kilobit Service for Seismic Surveys 17
1983 S.E.G. Conference Preview 19
VTS—Monitoring Waterway Traffic 21
Watching At-Sea Weather—Automatically 25
SWATH Ship—Calming Seas for Operating Efficiency 33
The Defense Meteorological Satellite Program 37
Technology in Dredging: A Progress Report 41
Tuning Out Propeller Vibration on High-Speed Vessel Hulls 44
Acoustic Tomography: Measuring Whole Oceans At Once 57

(Continued on page 44)

Ocean proof slipringless Rotary Contacts

ZERO MAINTENANCE



NEW TECHNOLOGY

- Submersible to any Depth
- Explosion Proof Design
- Distortion Free Color Video Transmission
- Computer Compatible (500 Kilobaud Data Rate)
- Microvolt Signal Capability
- Unaffected by Salt Air Environments and Vibration

MERIDIAN LABORATORY
2415 EVERGREEN ROAD
P.O. BOX 156 • MIDDLETON, WISCONSIN 53562-0156
PHONE 608/836-7571 • TELEX: 254708

CIRCLE NO. 65 ON INQUIRY CARD

When you're sending power, signals or fluids to the bottom

depend on NSRFC. Our electrical slip rings have become the standard of the North Sea. Capable of handling fluids and electrical signals in a variety of configurations, our slip rings offer maximum dependability, fast delivery and competitive pricing.

For complete information contact:
Marketing

Nova Scotia Research Foundation Corporation

P.O. Box 790, Dartmouth, Nova Scotia, Canada B2Y 3Z7
Telephone (902) 424-8670
Telex 019-22715

CIRCLE NO. 27 ON INQUIRY CARD

(Continued from page 42)

Soapbox: The National Ocean Policy Commission: The Time is Right 85

September 1983

Oceanography's Canon *Editorial* 7
Keys to Effective Winch Selection 10
Anchor Chain Cable, Designing for the Next Decade 14
Opinion Poll Results 19
Halter Marine Delivers New Tug Supply Boat 21
Dynamic Braking Systems 23
Improving Survivability of Underwater Cable Systems 27
Syntactic Foam Sphere Improves Oceanographic Mooring Performance 29
Telemetering Wave and Current Data in Real Time 32
Navy Labs Shine in Broad Federal Study 36
The Naval Oceanographic Data Distribution System (NODDS) 38
Dodging the Weather 42
Soapbox: Emerging Law of the Sea and Polymetallic Nodules 69

October 1983

A Good Show *Editorial* 7
Canada's Stake in the Oceans Centered in Nova Scotia 10
The National Marine Pollution Research, Development and Monitoring Program 17
Sea Ice Movement and Design of Arctic Offshore Structures 26
Ocean Community Enjoys San Francisco's Hospitality 32
Gulf Canada Challenges Beaufort Sea Ice 39
Data System Options for STD Recorders 43
USS Monitor Anchor Recovered after 120 Years Submerged 46
An At-Sea Automated Data Acquisition and Satellite Transmission System 48
Seafloor Probe Will Unravel Marine Sediment Properties 51
New Coal-Fired Collier Plies Eastern Seaboard 52
Soapbox: Ocean Engineering Has Arrived! 77

November 1983

USW and ASW Maintain an Advantage *Editorial* 7
Seasat Research Could Make Ocean "Transparent" for ASW 10
Fiber Optics for Undersea Applications 18
Lamps MK III System: A Step Closer to 'Operational' 27
Sonar Developments Catalyze Technology Progress 28
Cubic Develops ASW Sonobuoy Reference System 33
Radm Brad Mooney, Jr. Navy's New Research Chief 37
Moderate Attendance Marks Las Vegas S.E.G. Conference 39
Epaulard ROV Used in NOAA Polymetallic Sulfide Research 40
Oceaneering Pioneers Efficient Platform Removal Technique 45
U.S. Security Assistance Programs Described 48
Seawater Velocity Effects on Corrosion Behavior of Materials 51
Soapbox: Ocean Resources: The Need for Executive Direction 81

December 1983

Inventory & Audit: X *Editorial* 7
Undersea Contractors Continue to Mix Vehicles with Divers 10
U.S. Navy Saturation Diving Aids Oceanographic Research 18
The Link to Success: Survivable ROV Tether Cables 22
Andre Galerne Innovator, Diver, Businessman Extraordinaire 27
California School Trains Diving Technicians for Worldwide Work 29
High Resolution Sediment Profiling with REMOTS Camera System 34

(Continued on page 46)

ALL SOLID STATE

KILOWATT AMPLIFIERS

AUDIO TO ULTRASONIC
LINEAR AND SWITCHING TYPES
YEARS OF PROVEN RELIABILITY AT SEA
FOR DRIVING UNDERWATER TRANSDUCERS
AND LABORATORY APPLICATIONS

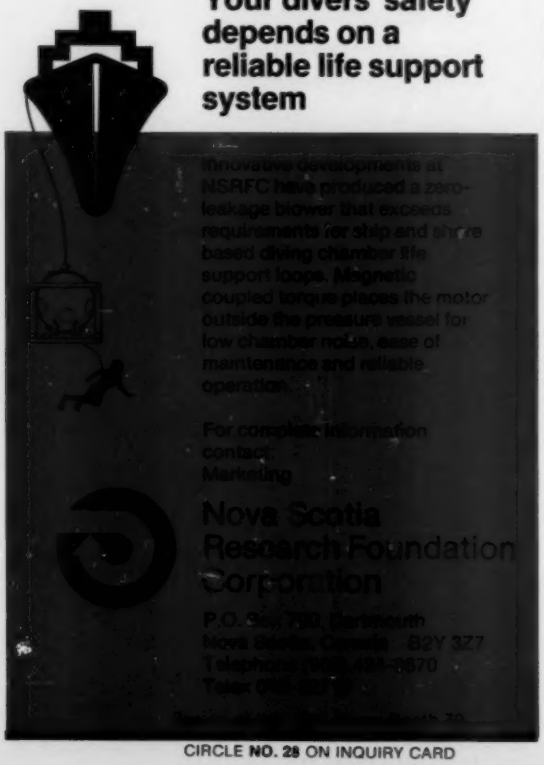
Air filter has been removed
Power Ratings from 500 W to 100 KW
Full rated KVA into reactive loads down to ZERO p.f.
For submarines, standard racks, and portable use.

SHORT-CIRCUIT PROOF — FAIL SAFE
Send for TECHNICAL MEMOS and CATALOG

INSTRUMENTS, INC.
7263 Engineer Road, San Diego, CA 92111
(619) 571-1111

CIRCLE NO. 20 ON INQUIRY CARD

Your divers' safety depends on a reliable life support system



CIRCLE NO. 28 ON INQUIRY CARD

(Continued from page 44)

PROES ROV Cleans, Inspects Underwater Platform Structures 38
International Diving Symposium '84 52
Soapbox: The Importance of Training Standards for Commercial Divers 81

Part 2
Authors

Armstrong, A.C. 4 18
Barbee, William D. 1 34
Beach, Robert L. 6 39
Beckman, W.C. 10 26
Bennett, Peter B. 1 17
Booda, Larry L. 1 13, 1 55, 2 23, 4 61, 5 31, 5 43, 6 10, 9 36, 10 10, 10 32, 11 10
Busby, Frank 1 16
Byrne, Dr. John V. 1 43, 7 93
Carlson, Lt. Margaret E. 8 21
Cattanach, D. 7 6
Christensen, James L. 2 10
Clay, Peter 9 29
Cook, Steven K. 10 48
Dinsmore, Robertson P. 6 69
Drummond, Scott E. 8 33
Earle, Dr. Sylvia A. 5 69
Echert, D.C. 10 26
Flipse, John E. 1 41
Fricke, J.R. 8 10
Fucciloi, Capt. John C. 1 25, 5 21
Galerne, Eric 11 40
Gay, John P. 3 24
Germano, Dr. Joseph D. 12 34
Gibson, Philip T. 12 22
Girard, Dominique 2 30
Graham, David M. 10 33, 10 34, 10 39, 11 27, 11 37, 12 27
Gross, Dr. M. Grant 1 21
Grover, David 8 41
Hanson, William 8 17
Harvey, David B. 9 10
Heitman, Lynn B. 5 11
Hinga, Kenneth R. 2 36
Hicks, Jr., James W. 3 37
Hollien, Harry 3 37
Hood, Edwin M. 1 23
Hougart, Bille 1 36
Hubbard, Ghislaine 2 27
Jackson, Doug 9 29
Jameson, James S. 11 33
Jones, Richard L. 4 43
Kelly, Paul L. 4 23
Killingsworth, Steven 9 10
Knauss, Dr. John A. 1 85, 2 69
Kosalos, James G. 11 28
Latham, Donald C. 3 10
de Laval, Gilbert 9 14
Lawrie, James A. 1 29
Lawson, Kenneth 10 43
Lazanoff, Sheldon 9 38
Lee, T.S. 11 51
Libby, G. Curtis 9 23
Lipke, David W. 5 19
Lipkin, Joel 2 36
Lunde, Terje 6 42
Mackenthun, Dieter 5 38
Malahoff, Dr. Alexander 7 19
Maton, Gilbert L. 1 35
McAllister, Dr. Raymond F. 10 77
Melrose, Simon 6 20
Mooney, Radm. John B. 1 37
Mulcahy, Michael 3 16, 3 31, 4 31, 5 29, 6 24, 7 27, 7 37, 8 19, 11 39, 12 10, 12 29
Munro, Donald F 4 35
Nicholson, William M. 11 81
Nolan, Tom 3 85
Orzech, James K. 12 18
Pan, J.J. 11 18
Pardo, Dr. Arvid 9 69
Porta Dave 2 15
Randall, Dr. Richard 1 21
Ransone, Morris A. 4 97
Ricci, Joseph 1 21
Robb, David W. 1 38, 5 34, 6 17, 7 39
Robertson, Andrew 10 17
Robertson, John 12 81
Savit, Carl 1 15
Scambary, Rex 4 45
Scully, R. Tucker 1 40
Schefler, Loran 1 11, 4 11
Slonim, Gilvan M. 1 44
Smith, John G. 3 33
Stansell, Jr., Thomas A. 4 48
Thurnheer, H.U. 4 18
Walsh, Dr. Don 8 85
Walther, James A. 12 22
Wildman, Robert D. 1 26
Yeske, Dr. Lanny A. 1 22
Zegowitz, Vincent 10 48

(Continued on page 48)

(Continued from page 46)

Part Three
SUBJECT INDEX

Acoustic profiling 2/15
Acoustic Signal Processing Course 5/58
Acoustic Tomography 1/21, 8/57
Advanced Ocean Drilling Program 5/9
AIMS antenna system 6/61
"Alexander Kjelland" rig 5/9
Alloy Research 5/47
Aloha Support Vessel 11/42, 12/15
American Oceanic Organization
  Meeting 4/64
Anchor Chain Cables (article) 9/14
AMETEK-Straza 12/11
Antarctic ocean bottom cores 6/65
Antarctic treaty 1/40
Antisubmarine Warfare
  fiber optics applications 11/21
  Funding 1/13, 3/49, 11/7
  helicopter 11/27
  market analysis 1/40
  programs 2/48, 12/7
  research 11/10, 12/64
  security assistance 11/48
  sonobuoys 11/33
Anti-toxic-waste bill 4/74
Aquaculture 1/36, 4/73, 6/49, 7/9
Aquatic animal diseases 1/58
Artificial reefs 2/51
  conference 4/73
  legislation 9/41
  technique 11/45
ASAP (program) 8/25
Atlantis II support vessel 12/9
Atlantis IV habitat 1/17
Atmospheric Diving Suits 1/16
Australia II hull test 11/77

Baltic Sea, aquaculture 7/9
Barents Sea ice platform 5/32
Bass Strait 4/45
Bathymetry, multibeam 1/23
  sonar 11/28
Battelle Petroleum Technology Center 6/47
Bear Trap 1/9
Beaufort Sea Drilling 10/39
Bedford Institution of
  Oceanography (profile) 10/10
  BIONESS system 5/63
Bond, Capt. George F. (obituary) 5/9
Buoys, wave gauge 1/58
H.M.S. Broadalbane 3/9, 7/37

Cable laying 5/38
Canadian Resource Taxation 3/67
Cesar 83 expedition 3/9
Chief of Naval Research 11/37
Chinese Offshore Operations 3/65
  rig construction 5/46
Climate Data Center 3/62
Coastal Engineering Symposium 5/54
Coastal Surveillance System 12/67
College of Oceaneering (profile) 12/29
Commercial diving ... 12/10, 12/29, 12/52, 12/81 12/81, 12/60, 3/37
Compass awards (MTS/IEEE) 10/34
Computerized Sea Safety 7/9
Corrosion seawater effects 11/51
Correct measurement 9/32
Current profiler 2/10

DIFAR buoys 6/45
DTAGS (deep towed array) 10/55
Data acquisition, control &
  telemetry system 4/74
Decompression 12/27
Deep diving, forecast 1/17
Deep diving system Mk 2 ..... 12/18
Deep Ocean Corer 3/69
Deep Sea Drilling Project 3/9, 3/69
Deepwater welding 3/65
Defense Meteorological Satellite Program 8/37
Department of Trade and Industry (DTI) 7/9
Digicourse, Inc. (profile) 4/31
Digital pressure checking 4/57
Diver navigation by sound 3/37
Diving Mosquito mobile habitat 1/16
Diving research 6/30
Diving standards 12/81
Dredge spoils 7/53
Dredge spoil profiling 12/34
Dredging 8/41

DSV 205 support vessel (diving) 8/62

EPIRB system 5/25
Eastport Marine Systems 12/11
Echo Sounder 1/46
El Chicon cloud 5/55
Electromagnetic engine 4/69
Electronic diver detection system 4/75
DTV Elk River 12/18
El Nino 1/55, 6/9
S.S. Energy Independence vessel 10/52
English channel trenching 4/69
Erosion-corrosion 11/51
Exclusive Economic Zone 2/57, 4/9, 11/63

Falcon Leader 4/64
Federal navigation plan 3/10
Federal oceanographic fleet 6/69
Fiber Optics 11/18
  ROV cables 9/54, 12/22
Fisheries research 3/66
Fishing permits 6/57
Fletcher's Ice Island 8/81

Galerne, Andre (profile) 12/27
Geophysical survey 1/15
Georges Bank drilling effects 8/66
Geotechnically instrumented
  seafloor probe 10/51
Glomar Challenger 3/9, 9/52, 11/74
Gorda Rift 11/40
Guyed tower platform 7/65

Harbor Branch Marine Biotechnology Center 8/79
Harvey-Lynch, Inc. 11/66
USNS Hayes mission changed 9/9
Heavy-lift vessels 11/66
Helios gas 1/17
R/V Hollis Hedberg 4/18
Houseboats 9/65
Hull coating 6/42
Hydrographic surveying 1/22
  NAVOCEANO 1/37
  Echo sounder 1/46
Hydro Products 12/13

INMARSAT ... 1/26, 1/71, 3/67, 3/71, 5/31, 7/61, 8/17
Ice management system 6/20
Ice movement 10/26
Infrared communications 12/9
International Diving Symposium (report) 3/31
  preview 12/52
International Maritime Organization 5/21
International Submarine Engineering 12/10
International Underwater Contractor 12/15
Institute of Navigation meeting (preview) 5/47

R/V Johnson support ship 12/70
Juan de Fuca straits 11/40

Keel winglets 11/77
Kodiak I tug 9/21

Lake Baikal 7/54
Laser hydrography 1/23
LAMPS Mk III 11/27
Law of the Sea, conference 1/31
  mining 1/41, 1/67
  polymetallic sulfides 9/69
  manganese nodules 9/69
Lloyd's Register plan 4/84
Lulu support vessel 12/9

Manganese nodules 2/15, 2/30, 9/69
Manned submersibles 1/16
Marine biology 12/18
Marine education 1/31
Marine seismic system project 6/45
Marine Technology Society 1/35, 3/73
Marine snow 12/18
Marisat improvements 5/19
Maritime communications 5/16
Maritime policy (OTA) 12/57
Maritime Redevelopment Bank 8/50
Maritime satellite rules (FCC) 4/76
R/V Melville 6/47
Metric use 11/77
Mine countermeasure course 5/53
Mineral resources (NACOA) 11/63
Minimer buoy 4/35
Mining, ocean 1/41
Mobile drilling island 11/64, 12/61
Mobile Offshore Drilling Rigs 4/23
MOMS 10/63
USS Monitor ironclad 9/9, 10/46, 12/70
Mooney, R. Adm. John B. "Brad" 10/9
  (profile) 11/37
Multibeam bathymetry 1/23

NACOA
  EEZ policy 11/63
  funding 2/57, 3/7, 6/43
  maritime subsidies 5/49
  NOAA independence 9/40
  ocean sensing policy 1/26
  purpose 1/85, 2/69
  shipping policy 1/23
NCEL 7/27
NODDS 9/30
NOAA
  data buoys 7/67
  fishery report 5/54
  funding 3/7, 3/47
  independence 7/40, 9/19, 9/40, 12/57
  NOAA-E satellite 3/9
  R/V rehabilitation 6/17
  "Year of the Ocean" 4/64, 12/57
NOIA
  annual meeting 5/42
  telecommunications committee 1/25
National Aquaculture Act of 1980 ..... 7/39
National Oceanographic Data Center 2/52
National Ocean Policy Commission 8/85, 11/63
National Ocean Survey 1/23
National Weather Service 1/55, 1/60, 8/49
Naval Oceanographic Office 1/22
  research programs 1/37
Naval Oceanography Command 11/61
Naval research vessels 1/37
Navigation 3/24
Navstar (GPS) 1/25, 3/29, 4/48, 7/61, 8/9
Navy Labs 9/36
Navy League Convention (preview) 3/19
Navy Remote Ocean Sensing System 1/26
North Sea Contracts 5/52
Nuclear Waste Management
  Act of 1982 ..... 3/66

OTEC (article) 7/10
  funding 3/7
Ocean engineering 10/77
Oceanic Society (against sinking of obsolete A-subs) 4/72
Oceanographer of the Navy 11/37
Ocean Policy 1/44, 1/51, 6/43, 11/63, 11/81
Ocean pollution research 10/17
Ocean Ranger 11/64
Ocean resources 11/81
Ocean Sciences, forecast 1/21
  FY 84 request 3/47
  R & D expenditures 4/83
Ocean surveillance satellites 4/9
Oceans '83 preview 7/47
  report 10/32
Offshore oil
  forecast 1/11
  lease sales 1/60
  mobile rig fleet 4/11
  oil spill report 11/75
  reserves 2/27
  world depletion 11/77
Offshore Technology Conference
  preview 4/40
  1984 cancelled 4/71
Oil spill
  absorbent 6/57
  barrier 12/71
  dispersant 8/65, 11/75
  recovery 6/44
  response program 5/54
  SPIL-COM 5/54

Perry Offshore Inc. 12/15
Pier renovations 8/52
USS Pigeon 12/18
Pingers 11/66
Polymetallic sulfides
  Law of the Sea 9/69
  research 11/40
Positioning systems (see also *Navstar*)
  acoustic (divers) 3/37
  catalog 12/66
  Hyper-Fix 12/66
  importance 3/24
  Navtrack V 12/67
  Polar fix 3/33
  Trisponder 3/16
Post-trenching 3/64
Professional Diving School of
  New York 5/58, 12/27
Propeller noise 8/44

RIB *Searider 7.4* 3/62
ROV '83 Conference report 5/29
ROVs (see submersibles)
Radio Technical Committee for Marine Services 1/9, 3/71
Radar, ocean mapping 12/64

(Continued on page 50)

(Continued from page 48)

Radar plotting aid 4 76
Radar, ships 11 62
Radioactive waste disposal 2 36
Real-time wave and current data 9 32
REEFS Task Force 10 94, 11 47
REMOTS camera 12 34
Rigs-to-Reefs 11 45
Ring of Fire 3 9
ROV tether cables 12 22

SEAS 10 48
SEG Conference 1983 preview 8 19
report 1 39
STD devices 10 43
SWATH ship 8 33, 11 9
Santa Fe Underwater Services 12 17
Satellite communications 2 50
Satellite navigation conference 11 73
Satellites 4 9, 5 49, 8 10
Saturation diving 12 18, 12 27, 12 29
Scotland Offshore 5 34
Scripps Marine Physical Laboratory 6 24
Sea Grant 1 26, 2 57, 11 74
Seahawk SH-60B helicopter 6 45, 11 27
Sea MARC system 11 28
Seamount Laboratory 6 10
SEAREX Program 12 71
Seasat 1 21, 11 10
Seawater desalination 3 69
Security Assistance Programs 11 48
Sediment profiling 12 34
Shipboard satellite terminal 5 64
Shipbuilders Council of America 4 72
Shipbuilding, commercial 1 23
Ship efficiency analyzer 3 60
Ship-locator systems 7 61
Shipping and Shipbuilding Revitalization Act 3 73
Sliding-saturation diving 12 18
Soft fendering 6 39
Solar eclipse studies 5 63
Solus Ocean Systems 12 10
Sonar, contract 2 49
mapping 11 28
training 3 21
Sonobuoys 1 64, 11 38, 11 33, 11 61
Soviet ASW 1 9
Space Command, U.S. Navy 11 61
Spider, suit 1 16
Submersibles
Aluminaut sub 2 40
Alvin sub 12 18, 12 9
Arcs sub 12 11
Argyronete sub 1 16, 2 41
Dart sub 1 70
Dual Dart sub 12 17
dual Hydra sub 12 17
dual Recon sub 12 17
Deep Drone sub 12 13
Dolphin sub 12 11
Epaulard ROV 2 30, 11 40
Harvey sub 5 46, 12 15
Hydra 1 29
Hydra 1000 sub 12 10
Hydra 2500 sub 12 10
Hydra/Orion sub 12 17
Hysub 5 sub 12 10
Johnson-Sea-Link sub 2 40, 12 18, 12 70
Makali'i sub 12 67
Mantis sub 1 16, 3 65, 12 15
Mantis Duplus sub 1 16
maxi-DART sub 12 10
Mermaid II sub 12 15
PAR 104 ROV 1 16
PROES ROV 12 38, 12 10
Phoenix 1350 sub 1 67
Pisces-VI sub 4 79
RCV-150 ROV 1 16, 12 15
RCV-225 ROV 1 16, 12 13
RPV-430 sub 4 43
Rascl sub 12 10
Recon IV ROV 1 17, 12 10
Scarab sub 12 13
Scorpi sub 12 11
Scorpio sub 12 11
Sea Horse II sub 1 16
Solo sub 1 16
Sous Marine Vehicle 97 sub 2 41
Trieste sub 12 9
Suction tugs 9 65
Swedish ASW rules 5 9
Syntactic foam spheres 9 29
Synthetic aperture radar 1 21, 11 12

T-AGOS project 9 50
Taylor Diving & Salvage 12 15
Television, underwater color 11 73
Tether cable (ROV) 12 22
Thrusters, ship propulsion 2 23
Tin mining (ocean) study 5 54
Titanic 8 9
Transit satellite 1 25, 11 73
Trident submarine 11 7, 12 9
Trimix gas 1 17, 12 27
Truly, Capt. Richard H. 11 61
Tuna fishing agreement licenses 11 62, 5 52

U.K. diving safety 8 64
UNOLS 1 34
URI Ocean Management Studies Conference 4 84
Undersea habitat 12 70
Undersea service industry 1 29, 2 40
Undersea vehicles, forecast 1 16
Undersea warfare (USW) 2 48, 11 7, 12 9
Underwater cable systems 9 27
Underwater inspection 7 41, 12 38
Underwater plow 5 46
Underwater swimming in USSR 10 9
USS Underwood 11 27

VEMS 8 53
Vanguard 10 9
Vessel charter 7 49
Vessel motion study 12 61
Vessel traffic services 6 61, 8 21
Vetter, Richard C. 6 9
Vulcanus II ship 1 59

Walsh, Dr. Don 12 9
WASP, suit 1 16
Wave measuring 9 32
Weather forecasting 1 55, 5 55, 6 9, 11 9
Weather routing 9 42
West Antarctica 10 57
White, Dr. Robert M. 5 9
Winch selection guide 9 10
dynamic braking 9 23
"Woods Hole Reflections" (book review) 4 61
"Year of the Ocean" (NOAA) 12 57

CONSTANT ACCURATE WATCH

EPC'S FIELD-PROVEN GRAPHIC RECORDER ANNOTATOR

keeps constant accurate watch, so you don't have to rely on people to pinpoint important data.

Available now with single or multi-channel outputs to annotate time, date, event, and navigation coordinates. Micro-processor based with up to 8 memories of 60 characters automatic or keyboard control.

When you want the full picture, activate the Annotator.

Call or write now for full details.

EPC

EPC LABORATORIES, INC.
5 Electronics Ave., Danvers, MA 01923
(617) 777-1996 Telex 940454

CIRCLE **NO. 33** ON INQUIRY CARD